tionally, as a result of human activity of one sort or another. The former interference is a consequence of breeding for uniformity, the latter is a side-effect of reducing the numbers of individuals of the plant and animal species involved. Replacement of a natural forest ecosystem by modern agriculture reduces the genetic diversity by three orders of magnitude at the very least. A comparison of the estimated pre-historic and present amount of genetic diversity leads us to the alarming conclusion that we may already have lost as much as 90% of the total genetic diversity of the biosphere!

The outcome of such diminished gene-diversity could be beneficial in the short-term, troublesome in the mid-term, and potentially catastrophic in the long-term effects. The stability of our biosphere is actively maintained by complex ecosystems, which can evolve newly-adapted populations according to the changing environment.

Reduction of the gene-pool, however, means lack of adaptability, which can lead all too easily to extinction. This in turn would reduce the complexity of ecosystems on a global scale, resulting in decreased environmental stability. Consequently there is a risk of a self-amplifying, run-away process which might have the gravest of consequences for the future of our biosphere, even conceivably leading to its ultimate destruction.

In order to avoid such catastrophic biospheric degradation, every loss of genetic diversity ought to be minimized at least until reliable risk-estimates are available.

GABOR VIDA, *Professor and Head*
Department of Genetics
Eötvös Lorand University
P.O.B. 324
1445 Budapest 8, Hungary.

Convention to Prohibit Hostile Use of Environmental Modification Techniques

The Convention on the Prohibition of Military or any other Hostile Use of Environmental Modification Techniques (ENMOD), approved by the General Assembly of the United Nations in December 1976, was opened for signature from 18 May 1977 to the end of the month at the United Nations Office at Geneva. Thereafter, States will be able to sign the Convention at United Nations Headquarters in New York. The proposal had been submitted to the General Assembly by the Conference of the Committee on Disarmament.

The Convention, which is of unlimited duration, provides that each State party undertakes not to engage in military or other hostile use of environmental modification techniques having 'widespread, long-lasting, or severe, effects as the means of destruction, damage, or injury, to any other State party'. It defines 'environmental modification techniques' as any technique for 'changing—through the deliberate manipulation of natural processes—the dynamics, composition, or structure, of the Earth, including its biota, lithosphere, hydrosphere, and atmosphere, or of outer space'. It also says that States parties undertake to exchange scientific and technological information on the use of such techniques for peaceful purposes.

If any State party has reason to believe that any other State party is violating the treaty (when once it enters into force), it may lodge a complaint with the United Nations Security Council, which, in turn, may initiate an investigation and subsequently inform the States parties of the results of that investigation.

A Consultative Committee of Experts may be convened at the request of any State party to 'make appropriate findings of fact and provide expert views relevant to any problem raised in relation to the objectives of, or in the application of the provisions of, the Convention'.

The instrument is to enter into force after ratification by 20 Governments. Five years after its entry into force, a conference of the States parties is to be convened in Geneva to review the operation of the Convention and ensure that its purposes and provisions are being realized.

INFORMATION SERVICE
United Nations Office at Geneva
Palais des Nations
1211 Geneva 10
Switzerland.

Vicuna Saved from Extinction

The graceful Vicuna (*Vicugna vicugna*) of the high Andes, bearer of the world's finest wool, has been saved from extinction and its numbers have increased four-fold in the past seven years as a result of intensive conservation efforts.

According to figures received by the World Wildlife Fund (WWF) from Vicuna specialists, there are now estimated to be well over 60,000 Vicuna—compared with a maximum of 15,000 in 1970. Most of the survivors are in Peru, which today has a population of 40–45,000. In Bolivia there are 2,000 and in Chile over 3,000, while Argentina is estimated to have up to 10,000.

The Vicuna, which resembles the domestic Llama but is smaller, is related to the camels of the Old World. Its wool was prized by the Incas as the 'Royal Fleece', and vicuna were at that time herded and sheared. The disastrous slaughter occurred after the Second World War, when it is estimated that over 400,000 Vicuna were killed in 20 years to supply the luxury markets of North America and Europe.

Action was taken 'in the nick of time'. Peru established a National Vicuna Reserve at Pampa Galeras in 1965, where about 1,700 animals survived—today the area has over 30,000—and an international conservation action programme was launched. Other Vicuna countries established reserves and trade controls. The United States and Britain banned Vicuna wool imports.

The World Wildlife Fund gave financial support for scientific studies, which established good management of the surviving Vicuna; WWF also provided equipment for reserves and guards, and joined in arranging training courses for reserve managers and guards.

The programme has also included intensive public education on the value of the Vicuna by means of lectures, car and lorry stickers, and press, radio, and cinema, publicity. The success has not been without its toll, however, and game guards have been killed and wounded in clashes with poachers at Pampa Galeras.

The first steps are already under way in Peru to develop a well-managed Vicuna wool, meat, and skin, industry for the benefit of the people of the High Andes and of the national economy.

PETER F. R. JACKSON, *Director of Information*
World Wildlife Fund
110 Morges, Switzerland.